

PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project Umatilla River Fish Passage Operations	
BPA project number	8802200
Contract renewal date (mm/yyyy)	10/01/1999
Multiple actions? (indicate Yes or No)	No
Business name of agency, institution or organization requesting funding Confederated Tribes of the Umatilla Indian Reservation	
Business acronym (if appropriate)	CTUIR
Proposal contact person or principal investigator:	
Name	Gary A. James
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NPPC Program Measure Number(s) which this project addresses 7.9B, 7.10A, 7.4I, 7.4L	
FWS/NMFS Biological Opinion Number(s) which this project addresses Number 383 - National Marine Fisheries Service Biological Opinion for 1995 to 1998 Hatchery Operations in the Columbia River Basin Section IV.C.3.b.	
Other planning document references Wy-Kan-Ush-Mi Wa-Kish-Wit, Volume II. 1995. CRIFTC – Umatilla River, Instream Flow and Passage (II.B.) Umatilla Subbasin Plan. 1990. CTUIR – Part II, Habitat Protection Needs, Habitat Protection Objectives and Strategies and Part IV, Anadromous Fish Production Plans, Spring Chinook Actions (IA,IIA), Summer Steelhead Actions (IA,IIA), Fall Chinook Actions (IA,IIA), Coho Specific Considerations Umatilla Hatchery Master Plan. 1989. CTUIR/ODFW – Production Profile, Inbasin Constraints and Solution to Problems and Facilities Needed to Implement Program, Outplanting Schedule & Coordination, Broodstock Collection and Holding Facilities. Draft Umatilla Supplemental Hatchery Master Plan. 1993. CTUIR – Present Rehabilitation Efforts, Fish Passage Improvement and Flow Enhancement (III.C.) Umatilla Basin and Hatchery Annual Operation Plan. 1998. CTUIR/ODFW – Sec. II.-V. Umatilla Fisheries Restoration Plan. 1986. ODFW – Present and Proposed Flow Enhancement	

and Fishery Rehabilitation Projects and Costs and Rehabilitation Objectives and Potential Fishery Benefits

Short description

Increase survival of migrating juvenile and adult salmon and summer steelhead in the Umatilla Basin by operating passage facilities, flow enhancement measures, trap facilities, and transport equipment to provide adequate passage conditions.

Target species

Coho, Fall Chinook, Spring Chinook, Summer Steelhead

Section 2. Sorting and evaluation

Subbasin

Umatilla

Evaluation Process Sort

<i>CBFWA caucus</i>		<i>CBFWA eval. process</i>		<i>ISRP project type</i>
<i>X one or more caucus</i>		<i>If your project fits either of these processes, X one or both</i>		<i>X one or more categories</i>
X	Anadromous fish	X	Multi-year (milestone-based evaluation)	Watershed councils/model watersheds
	Resident Fish		Watershed project eval.	Information dissemination
	Wildlife			X Operation & maintenance
				New construction
				Implementation & mgmt
				Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description
	Umatilla River Tributary Fish Passage
8802200	Umatilla River Fish Passage Operations (Subject Proposal)
8902700	Power Repay Umatilla Basin Project (Submitted separately)
8343600	Umatilla Passage Facilities O & M (Submitted separately)

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
8403300	Umatilla Hatchery O & M	Provide adequate passage for juveniles

		released and collect broodstock for hatchery production
8343500	Umatilla Hatchery Satellite Facilities O & M	Provide adequate passage for juveniles released and collect broodstock for hatchery production
9000501	Umatilla Basin Natural Production M & E	Provide passage for adults and juveniles to and from natural production areas and collect data on returning adults
8902401	Umatilla River/WEID Screens M & E	Operate Umatilla passage facilities and provide migration information
9000500	Umatilla Hatchery M & E	Operate adult trapping facilities and collect data on returning adults

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1989 to 1998	Adult and Juvenile Trapping and Transportation	Yes, fish survival objectives for adult and juvenile trapping and transportation met annually as outlined in Umatilla Hatchery & Basin AOP
1991 to 1998	Operation of Juvenile Bypasses and Adult Ladders	Yes, fish survival objectives regarding operation of bypasses, screens and ladders met annually based on NMFS criteria
1993 to 1998	Coordination of Umatilla Basin Project	Yes, fish survival objectives for seasonal enhancement of flows met annually based on criteria established by Umatilla Management and Monitoring and Evaluation Oversight Committee

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Increase survival of migrating juvenile and adult salmon and steelhead	a	Monitor river conditions and passage facilities operation in the Umatilla Basin to ensure adequate passage
		b.	Operate adult trapping facilities

Obj 1,2,3	Objective	Task a,b,c	Task
		c.	Operate juvenile trapping facilities
		d.	Operate transportation equipment

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measurable biological objective(s)	Milestone	FY2000 Cost %
1	10/2000	09/2001	Increase migratory survival of salmon and steelhead	Annual passage milestones achieved by meeting basin guidelines for passage and flow enhancement	100 %
				Total	100%

Schedule constraints

Funding of projects 8902700 and 8343600 listed in Section 3 under Umbrella proposals significantly enhances and compliments the effectiveness of this project.

Completion date

The project is seen as ongoing with no completion date identified (multi-year funding requested).

Section 5. Budget

FY99 project budget (BPA obligated):	\$360,153
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FY2000 budget by line item

Item	Note	% of total	FY2000 (\$)
Personnel		31.4	119,000
Fringe benefits		9.4	35,600
Supplies, materials, non- expendable property		1.7	6,500
Operations & maintenance		1.7	6,500
Capital acquisitions or improvements (e.g. land, buildings, major equip.)			0
NEPA costs			
Construction-related support			0
PIT tags	# of tags:		0
Travel		4.2	16,000

Indirect costs		16.4	62,200
Subcontractor		35.2	133,200
Other			0
Total project cost (including BPA portion)			379,000

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
Total project cost (including BPA portion)			

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	398,000	418,000	439,000	461,000

Section 6. References

Watershed ?	Reference
	Columbia River Inter-Tribal Fish Commission. 1995. Wy-Kan-Ush-Mi Wa-Kish-Wit, Spirit of the Salmon. The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes, Volumes I and II. Columbia River Inter-Tribal Fish Commission, Portland, Oregon.
	Confederated Tribes of the Umatilla Indian Reservation and Oregon Department of Fish and Wildlife. 1989. Umatilla Hatchery Master Plan. Submitted to Northwest Power Planning Council, Portland, Oregon.
	Confederated Tribes of the Umatilla Indian Reservation and Oregon Department of Fish and Wildlife. 1990. Columbia Basin System Planning, Umatilla Subbasin, September, 1990. Submitted to Northwest Power Planning Council and Columbia Basin Fish and Wildlife Authority, Portland, Oregon.
	Confederated Tribes of the Umatilla Indian Reservation and Oregon Department of Fish and Wildlife. 1998. Umatilla Hatchery and Basin Annual Operation Plan, for the period September 1998 to August 1999. Oregon Department of Fish and Wildlife, Pendleton, Oregon.
	National Marine Fisheries Service. 1995. Biological Opinion for 1995 to 1998 Hatchery Operations in the Columbia River Basin. National Marine Fisheries Service, Portland, Oregon.
	Olson, D.E. et al. 1990. Trapping and Transportation of adult and juvenile salmon in the lower Umatilla River in Northeast Oregon, 1989-1990. Project No. 88-022, Contract No. DE-BI79-89BP98636. Bonneville Power Administration,

	Portland, Oregon.
	Oregon Department of Fish and Wildlife. 1986. A comprehensive Plan for Rehabilitation of Anadromous Fish Stocks in the Umatilla River Basin. Project No. 84-10, Contract No. DE-AI79-84BP18008, Bonneville Power Administration, Portland, Oregon.
	U.S. Bureau of Reclamation. 1988. Umatilla Basin Project, Oregon. Planning Report – Final Environmental Statement. U.S. Department of the Interior, Northwest Region, U.S. Bureau of Reclamation, Boise, Idaho.
	U.S. Fish and Wildlife Service. 1981. Instream Flow Study of the Umatilla River. U.S. Department of the Interior, Fisheries Assistance Office, U.S. Fish and Wildlife Service, Vancouver, Washington.
	Zimmerman, B.C., et al. 1991 and 1992. Trapping and Transportation of Adult and Juvenile Salmon in the Lower Umatilla River in Northeast Oregon 1991-1992 and 1992-1993. Project No. 88-022, Contract No. DE-BI79-89BP98636. Bonneville Power Administration, Portland, Oregon. (Multiple annual reports cited in reference).
	Zimmerman, B.C. and B. B. Duke. 1993 through 1998. Trapping and Transportation of Adult and Juvenile Salmon in the Lower Umatilla River in Northeast Oregon, 1992-1993 through 1997-1998. Project No. 88-022, Contract No. DE-BI79-89BP98636. Bonneville Power Administration, Portland, Oregon. (Multiple annual reports cited in reference).

PART II - NARRATIVE

Section 7. Abstract

In the 1980's, CTUIR and ODFW began implementing the Umatilla Fisheries Restoration Plan. An integral part of that effort was to address inadequate flow and migration conditions by constructing fish passage facilities, initiating a trap and haul program, and implementing the Umatilla Basin flow enhancement project. The Fish Passage Operations Project objective is to increase adult and juvenile migrant survival in the Umatilla Basin. The project provides survival benefits for both hatchery and natural production by operating and maintaining ladders, bypasses, screen sites, trap facilities, and hauling equipment and coordinating these operations with flow enhancement measures. The project also provides valuable support to other projects by refining fish passage criteria, collecting return and migration data, and collecting and transporting broodstock.

The project began in 1989. Since then, up to 3,800 adults and 100,000 pounds of juveniles have been trapped and hauled annually. These increases in juvenile and adult survival contribute directly to the NPPC rebuilding goals. In addition, recommendations based on project observations and operations are incorporated into subbasin management documents. The project is viewed as a long term O&M project required for maintaining the survival advantages achieved by implementation of the fish passage and flow enhancement projects in the basin.

Section 8. Project description

a. Technical and/or scientific background

The lower 30 miles of the Umatilla River is heavily diverted for agricultural use. Historically, inadequate flow conditions in this river reach during critical portions of both adult and juvenile migration periods was the primary contributor to the extirpation of salmon and decline of summer steelhead populations in the Umatilla River as cited in many of the subbasin planning documents referenced in Sections 1 and 6.

Beginning in the early 1980's, CTUIR and ODFW began implementing a comprehensive plan to supplement steelhead and reestablish salmon runs in the Umatilla River Basin. A key component of the Umatilla Fisheries Restoration Plan was a threefold approach to addressing the inadequate migration conditions. The three ingredients included construction of fish passage facilities in the lower river, trapping and transportation of adults and juveniles, and implementation of the Umatilla Basin flow enhancement project.

The project is currently responsible for coordination and operation of all three of these passage programs in the Umatilla Basin. The project traps and provides physical transportation for adults and juveniles during periods of inadequate flow, operates physical passage facilities to optimize migration conditions during adequate flow periods, and coordinates use of flow enhancement and passage facilities to maximize passage conditions during critical migration periods.

It is assumed that these efforts will provide more adequate passage conditions and increase survival for migrating juveniles and adults. This should, in turn, assist in the restoration effort for salmon and steelhead in the basin by ensuring that passage conditions are not a limiting factor.

In addition, the flow enhancement efforts coordinated by the project have been identified by NMFS in their Hatchery Biological Opinion and the Council in Section 7.9B of the Fish and Wildlife Program as being necessary to reduce straying of Umatilla fall chinook into the Snake River and to restore fish populations in the Umatilla Basin.

The project has been in place since 1989 and has produced an annual report every year. Project observations of migration and adult returns are incorporated into subbasin management documents. The project is also responsible for other key components specified in the planning documents identified in Section 1 such as broodstock collection, adult disposition, passage facility O&M, and migration data collection. In addition, the project is an important

source of adult recovery data and contributes that data to other efforts such as the Fish Passage Center gas bubble disease monitoring, Fish Passage Center and CRITFC headburn study, Univ. of Idaho mainstem adult migration monitoring, and PAC and TAC reports. The project leader and assistant project leader have been on the project since 1991 and 1990, respectively. These key personnel also participate in the following related forums; Fish Screening Oversight Committee, Umatilla and Walla Walla Technical Work Groups, Umatilla River Operations Group, Umatilla Management Oversight Committee, and U.S. v. Oregon Production Advisory Committee.

b. Rationale and significance to Regional Programs

As stated in Section 8.a., inadequate passage conditions for both upstream and downstream migrants was the primary contributor to the extirpation of salmon and decline of steelhead in the Umatilla Basin. Although many passage improvements have been implemented there are still critical times of the year when inadequate migration conditions exist. The objective of the project is related to the project goal of assisting in the restoration of salmon and steelhead in the Umatilla River by increasing the tributary survival of migrating adults and juveniles.

The project goal of assisting in the restoration and rebuilding of salmon and steelhead populations in the Umatilla Basin is directly related to the Council's mandate to protect, mitigate, and enhance fish and wildlife affected by development and operation of the hydropower system. By increasing the survival of adult and juvenile migrants, the project immediately addresses the Council's goals as listed in the 1994 Fish and Wildlife Program. Improving passage conditions in the basin assists in the attempts to halt the decline of the summer steelhead population and allows rebuilding of the steelhead population and restoration of salmon populations to continue.

The project objective of increasing the survival of juvenile and adult migrants by addressing passage concerns is specifically outlined in Section 7.9B and 7.10 of the 1994 Fish and Wildlife Program. The project provides in place, in kind mitigation for historical losses associated with water diversions in the Umatilla Basin.

The Umatilla Fisheries Restoration Plan is a comprehensive effort which involves many different projects. This not only includes the umbrella subproposals and other related BPA projects listed in Section 3 but public and private habitat enhancement efforts as well. The success of these many projects and the overall Umatilla Fisheries Restoration Plan is directly dependent on the ability of the Fish Passage Operations Project to ensure that tributary passage conditions are no longer the limiting factor affecting salmon and steelhead survival in the basin.

c. Relationships to other projects

The Umatilla Fish Passage Operations Project is one of three critically linked projects that together form the basis for the Umatilla River Tributary Fish Passage umbrella proposal identified in Section 3. These three projects are dependent on each other in order to meet the passage objectives in the basin. The Power Repay Project provides funding for operation of the Umatilla Basin Project which the Fish Passage Operation Project coordinates and the Passage Facilities O & M Project provides maintenance for the passage and trapping facilities which this project operates. Multi-year funding is being requested for these three related projects listed under the Umatilla River Tributary Fish Passage umbrella.

The Fish Passage Operations Project is a cooperative effort between CTUIR and ODFW which provides an important link between many diverse interest groups involved in restoration efforts. The project provides a "contingency plan" for fish during low flow periods to provide adequate passage opportunity while irrigation demands remain intact. The project coordinates operation of the Bureau of Reclamation Umatilla Basin Project and the BPA funded passage facilities with the Oregon Department of Water Resources and local irrigation districts to provide adequate flow and fish passage conditions. The daily operation and maintenance of the fish passage facilities is conducted by local irrigation districts under the direction of the project. The project works directly with NMFS, and private engineering consultants, to review and provide comments on passage facility designs and operating criteria.

The project is also directly involved in the production component of the restoration program. In addition to providing safe passage for both natural and hatchery adults and juveniles to and from natural production areas, the

project is also responsible for collecting and transporting broodstock required for artificial production programs. These brood are spawned by CTUIR and ODFW hatchery staffs and provide eggs for smolt programs at both ODFW and U.S. Fish and Wildlife Service hatcheries which are acclimated at CTUIR facilities. The project is also involved in transportation of juveniles from these hatcheries as well as transporting surplus adults from WDFW hatcheries to natural production areas in the Umatilla Basin. The project also collects adult and juvenile migration data as part of the M & E effort in the basin.

d. Project history (for ongoing projects)

The Project has been ongoing for 12 years. It has retained the same project number over that period but, beginning with FY98, the title and statement of work were expanded to include the Walla Walla Basin. The title was changed again in FY99 from Trap and Haul to Fish Passage Operations to more adequately represent current project responsibilities. In FY 2000, the Umatilla project is again being separated from the Walla Walla. The project costs have averaged \$249,507 over the 12-year period with a maximum annual cost of \$414,003 in FY95.

The project has produced an annual report for each year since 1989 which details numbers of fish trapped and hauled along with comments related to fish passage facility and equipment operation, pertinent biological & physical data, river flow conditions, problems encountered and management recommendations. Between 1990 and 1998, the project trapped and hauled from 914 to 101,000 pounds of juveniles from the Westland Canal juvenile facility. From 1989 to 1997, the project annually trapped from 3,800 to 6,300 adults at Threemile Dam. Of the adults trapped, 400 to 3,800 have been hauled upstream and 135 to 1,100 have been hauled for broodstock annually. In addition to trapping and transportation, the project also coordinates all aspects of the Umatilla passage program including O&M of ladders, screens, and bypasses and operation of the Umatilla Basin Project flow enhancement effort.

The project is continually learning how to more effectively operate and integrate physical passage facilities, trapping facilities, hauling equipment, and flow enhancement programs to increase the survival of smolts and adults to and from natural production areas. This information, along with that gained from observations of migration and adults returns, is used in turn to make adaptive management recommendations which are a key component of the Umatilla Hatchery and Basin Annual Operation Plan. The project fulfills a critical annual need required for operating and maintaining the passage improvements implemented in the basin and is therefore requesting multi-year funding status.

e. Proposal objectives

The project has one objective outlined in its statement of work: To increase the survival of migrating juvenile and adult salmon and steelhead in the Umatilla River. There are four tasks directed towards meeting that objective: 1) Monitor river conditions and operation of passage facilities to ensure adequate passage conditions exist for both upstream and downstream migrants; 2) Operate adult salmon and steelhead trapping facilities; 3) Operate juvenile trapping facilities; and 4) Operate hauling equipment to safely transport and release adult and juvenile salmon and steelhead.

Since the project is operational in nature rather than research oriented, specific data related to the success of the project is limited. There have been a few evaluations of isolated aspects of the project through the years. These evaluations have been conducted by a variety of outside monitoring and evaluation projects. The evaluations are referenced in project annual reports along with a brief discussion of results. Information gathered from these evaluations are incorporated into daily project operations where appropriate. The success of the project is primarily evaluated on meeting the passage criteria outlined by NMFS and the Umatilla Management and Monitoring and Evaluation Oversight Committee as well as the guidelines detailed in the Umatilla Hatchery and Basin Annual Operation Plan.

The project produces an annual report each year which includes the numbers of fish trapped and hauled, comments on passage facility and equipment operations, pertinent physical and biological data, identified problems, and passage operation recommendations. The project also contributes to many other documents as noted in section 8.a. above. The project monthly and annual reports provide an important adaptive management function by making recommendations to subbasin managers and management documents based on observations of migration and adult returns.

f. Methods

There are 4 tasks as noted in section 8.e. to achieve the project objective. Each of these tasks has an associated number of subtasks relative to it.

Task 1. Monitoring of river conditions and passage facilities. The project uses digital recording and handheld thermometers to monitor river temperatures. Flows are monitored by information received from river gauging stations. Time of year, water quality, flow conditions, and irrigation diversions are all factored into decisions regarding operation of the passage facilities and flow enhancement.

Generally, operation of both the adult ladders and juvenile screens and bypass passage facilities are guided by criteria developed by NMFS. Flow levels are based on recommendations made by BOR in the Umatilla Basin Project EIS and USFWS in their 1981 report, *Instream Flow Study of the Umatilla River*. The project itself has developed most of the guidelines for use of the Umatilla Basin Project flow enhancement program and integration of flow enhancement with the other components of the fish passage effort. A critical assumption in the passage program is that natural, volitional migration of upstream and downstream migrants is preferable to transportation and that higher overall survival will result if adequate natural passage conditions exist. Based on that assumption, attempts are made to maximize the time periods and optimize conditions for natural migration.

Task 2. Operate adult trapping facilities. Operation of trapping facilities are conducted under guidelines developed by the project in conjunction with NMFS and other affected agencies. Operations occur daily during migration periods under criteria specified in the Umatilla Hatchery and Basin Annual Operating Plan.

Task 3. Operate juvenile trapping facilities. Operation of trapping facilities are based on guidelines developed by the project in conjunction with NMFS and other affected agencies. Operations occur daily during migration periods under criteria specified in the Umatilla Hatchery and Basin Annual Operating Plan.

Task 4. Operate transport equipment. ODFW liberation protocols are used as a general guideline for hauling operations. These protocols have been further refined by the project for use under conditions experienced locally.

A more detailed discussion of project methods can be found in the project annual report, *Trapping and Hauling of Adult and Juvenile Salmon in the Lower Umatilla River in Northeast Oregon, 1997-1998* (Zimmerman and Duke 1998).

Environmental conditions are the overriding factor in the success of the project. During drought years, low water flows extend the period when inadequate passage conditions exist and require an extensive hauling effort. Typically, low flows also mean poor water quality conditions under which fish are to be trapped and hauled which results in lower survival rates. Low flow years also result in less water being available for flow enhancement which results in short volitional migration windows and in more extensive trapping and hauling.

g. Facilities and equipment

The major juvenile and adult trapping facilities operated by the project in the Umatilla Basin are described in detail in the project annual report, *Trapping and Hauling of Adult and Juvenile Salmon in the Lower Umatilla River in Northeast Oregon, 1997-1998* (Zimmerman and Duke 1998). Many refinements have been made at these facilities over the years to both the physical portions of the facilities as well as the operating criteria and are generally adequate for meeting management and project needs.

Transportation equipment includes one 3,000 gallon and two 370 gallon fish liberation units. The 3,000 gallon unit is a diesel operated tractor-trailer equipped with a 12 inch discharge opening and two holding chambers capable of isolating two groups in the same load. The unit has both liquid oxygen and electric aeration systems. The two 370 gallon units are mounted on dual axle trailers and are towed by pick-up trucks. Each unit has compressed gas aeration and a recirculation system. Both units have eight inch discharge openings.

The project currently has sufficient office space, shop availability, and support vehicles. The project also has two computers which are adequate for project recordkeeping and data assimilation requirements. No additional high cost capital items are anticipated to be needed by the project.

h. Budget

These costs have generally been developed over the extensive history of the project and as a result have decreased in recent years as the project has become more efficient and the hauling effort has reduced. Due to the critical annual need for the project, multi-year funding is being requested.

Personnel – Costs based on manpower (biologists and fisheries technicians) required to operate the Threemile Dam facility on a daily basis from fall through spring and the Westland juvenile site from spring through summer. This includes facility watch personnel at the Threemile Dam adult facility. There are also manpower requirements involved in monitoring the passage facilities and river conditions, and for project biologists to participate in management, technical, and M & E work groups. In addition there are associated costs for program management and secretarial services.

Fringe – Standard CTUIR rate.

Supplies – Miscellaneous field supplies necessary to conduct daily operations such as CO₂, O₂, nets, brushes, etc.

Operations and Maintenance – Costs based on annual need to service transport equipment and small maintenance needs associated with the trapping facilities. Most major O & M costs are covered under project 8343600.

Travel – Primarily associated with GSA vehicle rental, mileage, and insurance. A portion is related to travel to conferences such as FSOC and NWFCC.

Indirect – Standard CTUIR rate.

Subcontractor – These costs are for ODFW's share of the project and are proportional to the same line items in the CTUIR budget.

Section 9. Key personnel

Brian C. Zimmerman
Fish Passage/Artificial Production Biologist

Employment

1991 - Present

Confederated Tribes of the Umatilla Indian Reservation, Pendleton, Oregon
Fish Passage Operations Project Leader (0.75 FTE)

Oversee all project activities including monitoring of flow and passage conditions; coordination and operation of passage facility and flow enhancement projects; operation of adult and juvenile trapping facilities; fish transportation; fish disposition and broodstock collection; development of

annual operating budget; data collection and assimilation; and production of monthly and annual reports. Serves on Fish Screening Oversight Committee, Production Advisory Committee, Umatilla Management Oversight Committee, Umatilla and Walla Walla Technical Work Groups, and Umatilla River Operations Group.

1989 - 1991

Paradise Bay Seafarms, Port Townsend, Washington

Production Manager

Supervised all aspects of production programs at three hatcheries, two net pen sites, and two adult capture stations. Responsibilities included design, coordination, and implementation of captive brood and conventional production programs; budget and contract development; scheduling and logistics of fish transportation program; facility design, startup, and modification; data compilation and analysis; research and technical program development; and interagency and community interaction.

1988 - 1989

Anadromous Incorporated, Coos Bay, Oregon

Saltwater Facilities Manager

Responsible for all aspects of daily facility operation and program implementation at two saltwater release/recapture facilities, one net pen site, and one freshwater hatchery.

1983 - 1988

Anadromous Incorporated, Corvallis/Klamath Falls, Oregon

Assistant Freshwater Facilities Manager

Assisted manager in supervising all aspects of daily facility operation and program implementation at two freshwater hatcheries.

Publications

Have co-authored last 8 project annual reports (see reference list, Section 7.g.).

Education

Graduated Cum Laude, 1979, Humboldt State University

Bachelor of Science Degree in Fisheries Science

William B. Duke

Fish and Wildlife Technician III

Employment

1990 - Present

Oregon Department of Fish and Wildlife, Pendleton, Oregon

Asst. Fish Passage Operations Project Leader (1.0 FTE)

Assists project leader in oversight of all project activities including monitoring of flow and passage conditions; coordination and operation of passage facility and flow enhancement projects; operation of adult and juvenile trapping facilities; fish transportation; fish disposition and broodstock collection; data collection; and production of monthly and annual reports. Also responsible for operation and maintenance of project transport equipment and assists in development of basin annual operating plan. Serves on Umatilla Management Oversight Committee, Umatilla and Walla Walla Technical Work Groups, and Umatilla River Operations Group.

1988 - 1990

Oregon Department of Fish and Wildlife, Enterprise, Oregon

Fish and Wildlife Technician I

Involved in all aspects of daily operations at Wallowa Hatchery including spawning, incubation, and rearing of rainbow trout and summer steelhead; operation of hatchery equipment; maintenance of grounds and equipment; and maintaining fish production records.

1985 - 1988

Oregon Department of Fish and Wildlife,
Enterprise/LaGrande/Clackamas, Oregon
Experimental Biological Aide

Involved in three different projects including summer steelhead creel survey and radio tracking; kokanee creel survey and stomach analysis; and mark/recapture study for walleye, squawfish and smallmouth bass.

1983 - 1984

Battelle Northwest Laboratories, Richland, Washington
Technician

Participated in all aspects of a juvenile salmonid migration study including juvenile collection and stomach analysis.

Publications

Have co-authored all 9 project annual reports (see reference list, Section 7.g.) and 4 Umatilla Hatchery and Basin Annual Operation Plans.

Education

Graduated 1984, Oregon State University
Bachelor of Science Degree in Fisheries

Section 10. Information/technology transfer

The technical information obtained by the project is disseminated by means of project monthly and annual reports, through basin technical, scientific, and operational group meetings, and by informal interagency and inter-project communication (field meetings, memorandums, and personal communication) which is incorporated into other more formal report formats developed by these other sources.

Congratulations!